DELHI PUBLIC SCHOOL BANGALORE SOUTH
LAB ACTIVITY – 1(2020-21)

Class: 12 **Topic: Functions, Modules and Libraries**
Subject: Computers

Note:
1. **Use try-except blocks for all programs to indicate errors in input format.**
2. Use built-in attributes/ methods/ functions wherever necessary.
3. All programs should be menu driven and looped. Include exit option for each to stop execution based on user's choice.

1. Input the following: expenditure for any 2 months, in the form of a nested dictionary, **under __main__** segment of your program. The outer dictionary uses name of the month as key and an inner dictionary as values. The inner dictionary contains 'Monthly' and 'Variable' as the keys. The corresponding values are given below. Store them in a list. Store 0 to indicate no value for each.

Monthly:
- Mortgage and/or rent
- Auto expenses: car payments, insurance, gas and tolls

Variable:
- Food: groceries and eating out
- Prescriptions

Create functions :

a) **def TOTAL_EXP(sal):** to accept salary **(from main)** ,compute total expenditure per month . Store this in a **global dictionary exp. Compute total expenditure of all the months** and return "surplus" - If salary-expenditure> 0 or "deficit" - If salary-expenditure< 0.
Use **positional argument** during function call. Store the result in **main as res**.

b) **def SUGGEST(result):** Using the values returned in the task above (**res from main**), display suggestions as given below.
1) If res is surplus - display: invest "remaining amount"
2) If res is deficit): Compute the highest among values in 'Variable'. Display "Change plan or stop spending …<max amount>"
If the deficit exists for all months, then display "work overtime or find a second job".
Use keyword argument during function call.

Sample input:
{'Jan':{'Monthly':[15000, 2000] ,'Variable':[2000, 0] } ,
'Feb': {'Monthly':[15000, 800], 'Variable': [1500, 100]} }

Enter no. of months2
Enter monthjan
Enter a list of 2 elements for monthly salary4000,6000
Enter a list of 2 elements for variable salary300,500
Enter monthfeb
Enter a list of 2 elements for monthly salary4000,7000
Enter a list of 2 elements for variable salary300,600
salary for month10000
{'Monthly': (4000, 6000), 'Variable': (300, 500), 'tot': 10800}
Change plan or stop spending 500
salary for month20000
{'Monthly': (4000, 7000), 'Variable': (300, 600), 'tot': 11900}
invest 8100

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2. Create a file/module Q2 and input details of 'n' countries in the form of a dictionary - **dct_cntry**. The values include a list of: capital, population, President/Prime Minister/Head of the State. Perform the following tasks, from the file Q2, **using a module for each.** Display all results, in a tabular form with headers.

a. Module name: **FORMATSTR**
Create the function: **def change( )** - Convert all strings in **dct_cntry** and store them with first letter in upper case. Return the dictionary.

b. Module name: **CHECK_PM**
Create the function: **def remove_cntry( )** - Move details of countries which do not have a Prime Minister/Head of the State (empty string). Store these in a separate dictionary. Return the dictionary.

c. Module name: **EDIT_CNTRY**
Create the function : **def add( )** - Prompt the user to add more data to the list of a chosen country. Choices include: names of neighbouring countries, type of government, places to visit, food delicacies. Return the edited dictionary.

3. Write a menu based program to perform the tasks given below.

a) Create a function: **def Med_Cat(med_name) -** Input names of 'n' medicines. Store them in a dictionary according to the categories: oral_drugs, injectable, vaccines, antiseptics.
Using the string med_name (sent from main), search for the category and print it.

b) Create a function : **def med_count(name_list) -** Input a list of medicine names (lst_med) and store them in a list. Remove elements from name_list(list of medicine names sent from main), which are not present in the list: lst_med. Display the original list and the modified list in main.

c) Create a function: **def chk_exp(usr_date)** - Input a dictionary, containing medicine name(key) , date of manufacture and expiry(values, in a list). usr_date is a tuple containing expiry date in the format : DD/MM/YYYY, and is input in main. Using usr_date, create a tuple of all medicines having this value. Return the tuple.

Enter no. of medicines2
enter one of the following categories oral_drugs, injectable, vaccines, antiseptics oral_drugs
enter name of medicineaaa
enter one of the following categories oral_drugs, injectable, vaccines, antisepticsinjectable
enter name of medicineccc
{'oral_drugs': [], 'injectable': ['ccc'], 'vaccines': [], 'antiseptics': ['aaa']}
Enter a medicine nameaaa
aaa is in category antiseptics

Enter a list of medicine names

Enter a medicine nameaaa
aaa is in category antiseptics

Enter a list of medicine names 'aaa','bbb','ccc'
Enter another list of medicine names'ppp','bbb'
original ('ppp', 'bbb')
new ['bbb']

4. Write a program to connect to any two programming based websites. Print the website that contains the maximum number of programming language names. In addition, print the first 4 lines of meta data of each website.